

# **EXHIBIT F**

**IN THE UNITED STATES DISTRICT COURT  
FOR THE EASTERN DISTRICT OF TEXAS  
MARSHALL DIVISION**

**TQ DELTA, LLC,  
Plaintiff,**

V.

## JURY TRIAL DEMANDED

**COMMScope Holding Company, Inc., Commscope Inc., Arris International Limited, Arris Global Ltd., Arris US Holdings, Inc., Arris Solutions, Inc., Arris Technology, Inc., and Arris Enterprises, LLC,**

**Civil Action 2:21-cv-310-JRG**  
**(Lead Case)**

**NOKIA CORP., NOKIA SOLUTIONS  
AND NETWORKS OY, and NOKIA OF  
AMERICA CORP.**

**Civil Action No. 2:21-cv-309-JRG**  
**(Member Case)**

## Defendants.

**PLAINTIFF'S DISCLOSURE OF ASSERTED CLAIMS AND INFRINGEMENT**  
**CONTENTIONS AND ACCOMPANYING DOCUMENT PRODUCTION**

Under Local Patent Rule 3-1 and 3-2, TQ Delta, LLC (“TQ Delta”) makes the following Disclosure of Asserted Claims and Infringement Contentions and Accompanying Document Production as to Defendants CommScope Holding Company, Inc., CommScope Inc., ARRIS US Holdings, Inc., ARRIS Solutions, Inc., ARRIS Technology, Inc., and ARRIS Enterprises, LLC (the “CommScope Defendants”) and Nokia of America Corp., Nokia Corp. and Nokia Solutions and Networks Oy’s (“Nokia Defendants”). TQ Delta, LLC does not waive any claim, contention, or argument regarding the factual and/or legal details of the following preliminary infringement contentions. Moreover, the following should not be construed as TQ Delta, LLC’s preliminary construction of any asserted claim or claim term.

TQ Delta, LLC reserves the right to modify, amend, supplement, or otherwise alter these

contentions based on receipt of further information that will be furnished by, produced by, or otherwise made available by Defendant through discovery that is not available at the time of these disclosures. For example, but without limitation, because Defendants' accused products and services use software and/or firmware to perform certain operations, details regarding the operation of the Accused Products are presently unavailable to TQ Delta. Accordingly, TQ Delta reserves the right to amend its contentions pursuant to the Court's Discovery Order, should supplementation become necessary as a result. Moreover, TQ Delta reserves the right to contend that the claims do not require further construction, clarification, or interpretation.

The claim charts submitted herewith in the attached Exhibits are not designed to represent the entire scope of infringement, but are merely to illustrate examples of manners in which the Accused Products infringe the identified claims of TQ Delta's Patents. Further, the division of claim elements in the attached claim charts is neither intended to be a modification of the claim language itself nor an admission that the claims should be construed by the division. Rather, the division of claim elements is provided for purposes of convenience and clarity.

### **Disclosure of Asserted Claims and Infringement Contentions**

#### **I. Disclosure Under P.R. 3-1(a)**

TQ Delta asserts that the CommScope Defendants infringe at least claims 17, 18, 21, 23, 25, 26, 29, 31, 33, 34, 37, and 38 of 7,453,881 ("the '881 Patent"); at least claims 17, 18, 19, 36, 37, 38, and 40 of 7,570,686 ("the '686 Patent"); at least claims 9, 13, 14, and 15 of 7,844,882 ("the '882 Patent"); at least claim 14 of 8,090,008 ("the '008 Patent"); at least claims 1, 5, 6, and 7 of 8,276,048 ("the '048 Patent"); at least claims 8, 10, 24, and 26 of 8,462,835 ("the '835 Patent"); at least claims 10, 11, 17, 18, and 25 of 8,468,411 ("the '411 Patent"); at least claims 16 and 22 of 8,937,988 ("the '988 Patent"); at least claims 1, 2, 3, 4, 9, 10, 11, and 12 of 9,094,348 ("the '348 Patent"); at least claims 10 and 11 of 9,154,354 ("the '354 Patent"); at least claims 11,

17, and 19 of 9,485,055 (“the ’055 Patent”); at least claims 8, 10, 11, 12, and 14 of 10,567,112 (“the ’112 Patent”); and at least claims 1, 2, 3, 4, 6, 8, 9, 10, 11, 13, 22, 23, 24, 25, and 27 of 10,833,809 (“the ’809 Patent”) (collectively, “the Asserted CommScope Claims”). TQ Delta alleges that the CommScope Defendants infringe each of the Asserted Claims of the Patent-in-Suit directly, contributorily, and/or by inducement (including under 35 U.S.C. § 271(f)(1) and (f)(2)), as alleged in the Complaint.

TQ Delta asserts that the Nokia Defendants infringe at least claims 17, 18, 19, 36, 37, 38, and 40 of 7,570,686 (“the ’686 Patent”); at least claims 9, 13, 14, and 15 of 7,844,882 (“the ’882 Patent”); at least claim 14 of 8,090,008 (“the ’008 Patent”); at least claims 10, 11, 17, 17, 18, and 25 of 8,468,411 (“the ’411 Patent”); at least claims 10, 28, and 36 of 8,495,473 (“the ’5473 Patent”); at least claims 8, 9, and 11 of 8,594,162 (“the ’162 Patent”); at least claims 16, 17, 18, 30, 31, 32, 37, 38, 39, 44, 53, 54, 55, and 60 of 8,595,577 (“the ’577 Patent”); at least claims 16 and 22 of 8,937,988 (“the ’988 Patent”); at least claims 1, 9, 10, 12, and 13 of 9,014,193 (“the ’193 Patent”); at least claims 1, 2, 3, 4, 9, 10, 11, and 12 of 9,094,348 (“the ’348 Patent”); at least claims 10, 11, and 12 of 9,154,354 (“the ’354 Patent”); at least claims 8, 9, 13, 14, 15, 16, 17, 18, and 21 of 9,300,601 (“the ’601 Patent”); at least claims 11, 17, and 19 of 9,485,055 (“the ’055 Patent”); at least claims 2, 3, and 4 of 9,547,608 (“the ’608 Patent”); at least claims 1 and 3 of 9,894,014 (“the ’014 Patent”); at least claims 1, 2, 3, 4, and 8 of 10,044,473 (“the ’4473 Patent”); at least claims 21, 22, and 23 of 10,409,510 (“the ’510 Patent”); at least claims 8, 10, 11, 12, and 14 of 10,567,112 (“the ’112 Patent”); and at least claims 1, 2, 3, 4, 6, 8, 9, 10, 11, 13, 15, 16, 17, 18, 20, 22, 23, 24, 25, 27 of 10,833,809 (“the ’809 Patent”) (collectively, “the Asserted Nokia Claims”). TQ Delta alleges that the Nokia Defendants infringe each of the Asserted Claims of the Patent-in-Suit directly, contributorily, and/or by inducement (including under 35 U.S.C. §

271(f)(1) and (f)(2)), as alleged in the Complaint.

## II. Disclosure Under P.R. 3-1(b)

TQ Delta alleges that CommScope's DSL Products infringe the claims recited above and detailed in the attached charts based on:

- Utilizing the VDSL2 standards (*e.g.*, ITU-T 993.2) in the manner described in the attached charts for the '686, '882, '048, '008, '835, and '354 Patents;
- Utilizing the G.Bond standards (*e.g.*, ITU- 998.2) in the manner described in the attached charts for the '881 Patent;
- Utilizing the G.INP standards (*e.g.*, ITU-T 998.4) in the manner described in the attached charts for the '411, '809, and '354 Patents; and
- Utilizing the G.fast standards (*e.g.*, G.9701) in the manner described in the attached charts for the '112, '348, '809, '055, and '988 Patents.<sup>1</sup>

On information and belief, the functionality of each version of CommScope's DSL Products since their launch has utilized the functionality in the attached claim charts. Identification of the above products is based on the reasonably available public information, and TQ Delta reserves the right to amend this list should additional products be identified during discovery.

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<sup>1</sup> TQ Delta accuses all CommScope products that are capable of utilizing any of these standards, including but not limited to the following customer premises equipment products as well as those with testing reflected in the claim charts: 5168N vDSL Gateway; 5168NV vDSL Gateway; 5268AC vDSL Gateway (AT&T use); Arris 3360; BGW210-700 (for AT&T?); FST1000 G.fast Bridge Modem (SFP Module), phone; FST1002 G.fast Bridge Modem (SFP Module), coax; FST1203 G.fast Bridge Modem (Wall / Desk Mount), phone, coax; FST1305 G.fast Bridge Modem (Wall / Desk Mount) VDSL2 35b, phone, coax; GA2305 | GA2305 xDSL Gateway; GA4305 | GA4305 xDSL Voice Gateway; GVT V5471 vDSL IAD Gateway?; GZ5NVG3XXX; NG764x xDSL Gateway CPE; NM55 Bonded vDSL2 Business Modem (for AT&T); NVG34x Series xDSL Gateway; NVG3XX; NVG448X [May be the same as NVG44x]; NVG44X | NVG44x xDSL Voice Gateway; NVG46X | NVG46x Ethernet Voice Gateways; NVG510; NVG589; NVG599 Triple Play Residential Modem; Pace 4111N aDSL Gateway; Pace 5031NV vDSL Gateway; Pace GA2305 aDSL Gateway; Pace GA4305 aDSL Gateway; Pace GV2305 vDSL2 Gateway; Pace GV4305 vDSL2 Gateway; Pace GV5705 vDSL2 Gateway; Pace GV5707 vDSL2 Gateway.

TQ Delta alleges that Nokia's DSL Products infringe the claims recited above and detailed in the attached charts based on:

- Utilizing the VDSL2 standards (*e.g.*, ITU-T 993.2) in the manner described in the attached charts for the '686, '882, '5473, '608, '510, '008, '162, and '354 Patents;
- Utilizing the bonding standards for VDSL2 and ADSL2 (ATM and PTM) in the manner described in the attached charts for the '193, '601, and '014 Patents;
- Utilizing the G.INP standards (*e.g.*, ITU-T 998.4) in the manner described in the attached charts for the '577, '348, '4473, '809, and '354 Patents; and
- Utilizing the G.fast standards (*e.g.*, G.9701) in the manner described in the attached charts for the '112, '348, '4473, '809, '577, '055, and '988 Patents.<sup>2</sup>

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<sup>2</sup> TQ Delta accuses all Nokia products that are capable of utilizing any of these standards, including but not limited to the following central office and customer premises equipment products as well as those with testing reflected in the claim charts: 5530 NA-C (Network Analyzer - Copper); 7300 ASAM UD (ABLT-D); 7300 ASAM HD (ADLT-J); 7300 ASAM HD ADLT-K (Annex B); 7300 ASAM UD (ABLT-B); 7300 ASAM UD ABLT-F (Annex B); 7302 ISAM (NDLT-G); 7302 ISAM FTTN ETSI; 7310 LVG (Loop Voice Gateway); 7330 ISAM FTTN ETSI; 7330 ISAM FTTN Remote Aggregator; 7330 ISAM XD EBLT-C; 7330 ISAM XD EBLT-E; 7330 ISAM XD EBLT-Q; 7330 ISAM XD EVLT-K; 7330 ISAM XD EVLT-N; 7330 ISAM XD VSEM-D; 7352 ISAM FTTB ONT (Optical Network Terminal); 7353 ISAM CX Compact Flexible Modular ONU; 7353 ISAM FTTB Modular ONU; 7354 ISAM FTTB Remote Unit (24 port eth VDSL2); 7356 ISAM FTTB Remote Expansion Module (48p / 96p mini MSAN 2 LT slots); 7357 ISAM FTTB Sealed Expansion Module (48p sealed VDSL2 remote); 7360 ISAM FX; 7362 ISAM; 7363 ISAM MX Remote; 7363 ISAM MX-6 (ETSI); 7367 ISAM SX/DX; 7367 ISAM SX/DX (Sealed or Dense Flexibility); 7368 ISAM CPE; 8950 DSL Assurance; Cellpipe 7130; ISAM 48 ports VDSL2 POTS Line Termination Board with System-level Vectoring (NDLT-G); ISAM 48 ports low power VDSL2 ISDN Line Termination Board (NVLT-Q); ISAM 48 ports low power VDSL2 POT LT Board (NVLT-P); ISAM 48 ports low power VDSL2 POTS Line Termination Board with integrated splitter (NVLS-A); ISAM 48 ports low power VDSL2 POTS LT Board with MELT (NVLT-N); ISAM 48 ports VDSL2 ISDN Line Termination Board (NVLT-D); ISAM 48 ports VDSL2 ISDN Line Termination Board (NVLT-H); ISAM 48 ports VDSL2 Line Termination Board with MELT (NVLT-M); ISAM 48 ports VDSL2 POTS Line Termination Board (NVLT-C); ISAM 48 ports VDSL2 POTS Line Termination Board (NVLT-G); ISAM 48 ports VDSL2 POTS Line Termination Board with Board-level Vectoring (NDLT-C); ISAM 48 ports VDSL2 POTS Line Termination Board with MELT and Board-level Vectoring (NDLT-F); ISAM 48 ports VDSL2 POTS Line Termination Board with System-level Vectoring (NDLT-K); ISAM 72 ports VDSL2 POTS Line Termination Board (NVLT-R); ISAM 72 ports VDSL2 POTS Line Termination Board with MELT (NVLT-S); ISAM 7353 Linecard (16 x VDSL) (MVLT-E); ISAM

TQ Delta alleges that the CommScope Defendants infringe each of the Asserted Claims of the Patent-in-Suit directly, contributorily, and/or by inducement (including under 35 U.S.C. § 271(f)(1) and (f)(2)), as alleged in the Complaint.

On information and belief, the functionality of each version of Nokia's DSL Products since their launch has utilized the functionality in the attached claim charts. Identification of the above products is based on the reasonably available public information, and TQ Delta reserves the right to amend this list should additional products be identified during discovery.

### **III. Disclosure of Under P.R. 3-1(c)**

Charts identifying where each element of each asserted claim is found within the Accused Instrumentalities are in the attached Exhibits. TQ Delta expressly reserves the right to augment and supplement its infringement contentions based upon additional information obtained, including but not limited to source code, through formal discovery.

### **IV. Disclosure Under P.R. 3-1(d)**

TQ Delta believes that each element of each asserted claim is literally present in the Accused Products. Nonetheless, TQ Delta contends that any claim element not literally present in the accused products or methods is found in those products or methods under the doctrine of equivalents because the differences between such claim element and corresponding accused

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7353 Linecard (32 x VDSL) (MVLT-D); ISAM 7363 32 Port Linecard (MELT); ISAM MX 32 port POTS voice board with integrated VDSL2/ADSL2 splitter (RPOT-A); ISAM MX 32 port xDSL SLV LT (RDLT-A); ISAM MX 32 port xDSL SLV LT (RDLT-B); ISAM MX 32 port xDSL SLV LT Linecard (MELT) (RDLT-C); ISAM MX 32 port xDSL SLV LT Linecard with MELT and VDSL2 provide 35b support (RDLT-E); ISAM MX 32 port xDSL SLV LT Linecard with VDSL2 provide 35b support (RDLT-D); ISAM MX 32 port xDSL SLV LT with integrated POTS splitters (RDLS-A); Lightspan access node SX/DX; Litespan 2000; ADLUD4EP; Litespan 2000; ADLUE4EP; MiniRAM; ADLT-E 3EC 15240; NDLT-J; NDLT-K; Stinger FS; STGR-LIM-AP-72.

element or step are insubstantial and/or the claim element and the accused element or step perform substantially the same function, in substantially the same way, to achieve substantially the same result. TQ Delta will supplement its infringement contentions should the Court's claim construction rulings or discovery indicate that a doctrine of equivalents theory is appropriate.

**V. Disclosure Under P.R. 3-1(e)**

Each of the Asserted Claims of the '686 Patent is entitled to a priority date of January 7, 2000, or, in the alternative, August 10, 2000, or in the alternative, January 8, 2001.

Each of the Asserted Claims of the '881 Patent is entitled to a priority date of October 5, 2001 or, in the alternative, October 4, 2002, or, in the alternative, October 8, 2008.

Each of the Asserted Claims of the '193 Patent is entitled to a priority date of October 5, 2001 or, in the alternative, October 4, 2002, or, in the alternative, October 8, 2008.

Each of the Asserted Claims of the '601 Patent is entitled to a priority date of October 5, 2001 or, in the alternative, October 4, 2002, or, in the alternative, October 8, 2008.

Each of the Asserted Claims of the '014 Patent is entitled to a priority date of October 5, 2001 or, in the alternative, October 4, 2002, or, in the alternative, October 8, 2008.

Each of the Asserted Claims of the '882 Patent is entitled to a priority date of October 12, 2004 or, in the alternative, October 11, 2005, in the alternative, April 16, 2010.

Each of the Asserted Claims of the '5473 Patent is entitled to a priority date of October 12, 2004 or, in the alternative, October 11, 2005, in the alternative, April 16, 2010.

Each of the Asserted Claims of the '608 Patent is entitled to a priority date of October 12, 2004 or, in the alternative, October 11, 2005, in the alternative, April 16, 2010.

Each of the Asserted Claims of the '510 Patent is entitled to a priority date of October 12, 2004 or, in the alternative, October 11, 2005, in the alternative, April 16, 2010.



Each of the Asserted Claims of the '048 Patent is entitled to a priority date of October 12, 2004 or, in the alternative, October 11, 2005, or, in the alternative, April 16, 2010.

Each of the Asserted Claims of the '008 Patent is entitled to a priority date of November 9, 1999 or, in the alternative, November 9, 2000, or, in the alternative, August 26, 2005, or, in the alternative, September 28, 2007, or, in the alternative, October 22, 2008.

Each of the Asserted Claims of the '835 Patent is entitled to a priority date of March 3, 2004 or, in the alternative, March 24, 2004, or, in the alternative, March 3, 2005.

Each of the Asserted Claims of the '112 Patent is entitled to a priority date of March 3, 2004 or, in the alternative, March 24, 2004, or, in the alternative, March 3, 2005, or in the alternative, April 28, 2010, or, in the alternative, June 11, 2013.

Each of the Asserted Claims of the '162 Patent is entitled to a priority date of March 3, 2004 or, in the alternative, March 24, 2004, or, in the alternative, March 3, 2005, or in the alternative, April 28, 2010, or, in the alternative, June 11, 2013.

Each of the Asserted Claims of the '411 Patent is entitled to a priority date of April 12, 2006 or, in the alternative, October 5, 2006, or, in the alternative, April 12, 2007, or in the alternative, April 15, 2010.

Each of the Asserted Claims of the '577 Patent is entitled to a priority date of April 12, 2006 or, in the alternative, October 5, 2006, or, in the alternative, April 12, 2007, or in the alternative, April 15, 2010.

Each of the Asserted Claims of the '348 Patent is entitled to a priority date of April 12, 2006 or, in the alternative, October 5, 2006, or, in the alternative, April 12, 2007, or in the alternative, April 15, 2010.

Each of the Asserted Claims of the '4473 Patent is entitled to a priority date of April 12,

2006 or, in the alternative, October 5, 2006, or, in the alternative, April 12, 2007, or in the alternative, April 15, 2010.

Each of the Asserted Claims of the '809 Patent is entitled to a priority date of April 12, 2006 or, in the alternative, October 5, 2006, or, in the alternative, April 12, 2007, or in the alternative, April 15, 2010, in the alternative, November 8, 2013.

Each of the Asserted Claims of the '055 Patent is entitled to a priority date of April 12, 2006 or, in the alternative, October 5, 2006, or, in the alternative, April 12, 2007, or in the alternative, May 10, 2010, in the alternative, February 13, 2013.

Each of the Asserted Claims of the '988 Patent is entitled to a priority date of April 18, 2000 or, in the alternative, April 18, 2001, or, in the alternative, October 4, 2005, or in the alternative, January 10, 2008, in the alternative, January 26, 2010.

Each of the Asserted Claims of the '354 Patent is entitled to a priority date of April 18, 2000 or, in the alternative, April 18, 2001, or, in the alternative, October 4, 2005, or in the alternative, January 10, 2008, in the alternative, January 26, 2010.

TQ Delta reserves its rights to amend the priority date of the Patents based on discovery in this case, including any discovery from third parties.

**VI. Disclosure Under P.R. 3-1(f)**

TQ Delta does not identify any such products under Patent Local Rule 3-1(f).

**Document Production Accompanying Disclosure**

**I. Disclosure Under P.R. 3-2(a)**

TQ Delta is not presently aware of any such discoverable documents in its possession, custody, or control.

**II. Disclosure Under P.R. 3-2(b)**

TQ Delta is not presently aware of any such discoverable documents in its possession, custody, or control.

**III. Disclosure Under P.R. 3-2(c)**

TQ Delta produces a copy of the file histories of the Patents-in-Suit at TQD\_TX-00000001-TQD\_TX-00044308.

Dated: November 4, 2021

Respectfully submitted,

By: /s/ Christian Hurt

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***Counsel for TQ Delta, LLC***

**CERTIFICATE OF SERVICE**

The undersigned certifies that a true and correct copy of the above and foregoing document is being served on this November 4, 2021, via e-mail on all counsel of record, each of whom is deemed to have consented to electronic service per Local Rule CV-5(a)(3).

/s/Christian J. Hurt  
Christian J. Hurt